

III. CLAIM AMENDMENTS

1. (currently amended) A method for reducing the power consumption of a mobile station (2) connected to a packet-switched network (4), in which packet-switched network information is transmitted in the form of data frames, ~~and in which the method comprising:~~

~~specifying a paging period is specified for a mobile station for~~

~~sending paging messages (UD1) essentially at the intervals of said paging period to the mobile station to enable to synchronize the mobile station with the packet-switched network;~~

~~setting the mobile station (2) is set in the standby mode at least for the time of the reception of paging messages (UD1), and after the reception of the paging message; (UD1), setting the mobile station, which is in the standby mode, is set to the idle mode, in which idle mode part of the functions of the mobile station (2) are set in one of the following states:~~

~~the power saving mode; or~~

~~switched off,~~

~~characterized wherein the method further comprises changing in that the mode of operation of the mobile station in the idle mode is changed from the idle mode to the standby mode according to any of the following alternatives:~~

~~at intervals during the paging period to receive information transmitted in the packet-switched network for maintaining synchronization to the packet-switched network; receive information transmitted in the packet switched network either at intervals during the paging period for maintaining synchronization to the packet switched network; or at the end of the paging period for performing the resynchronizing the mobile station to the packet-switched network again.~~

2. (currently amended) A method according to Claim 1, ~~characterized comprising defining in that at least two~~

different paging periods are defined, and performing that the selection of the paging period for the idle mode is performed in the mobile station.

3. (currently amended) A method according to Claim 2, characterized comprising performing in that the selection of the paging period is based on the basis of received signal strength.

4. (currently amended) A method according to Claim 3, characterized comprising performing in that the selection of the paging period is based on the basis of running average of the received signal strength.

5. (currently amended) A method according to Claim 3, characterized further comprising in that the method comprises at least the following steps:

-defining a first threshold value (X) is defined,
-defining a maximum paging period and a minimum paging period are defined,
-calculating a representation of the received signal is calculated by using the received signal strength,
-comparing said representation of the received signal is compared with at least one or more previously calculated representations of the received signal,
-increasing the paging period, if the comparison indicates that the difference between the representation of the received signal and all of said one or more the previously calculated representations of the received signal lies within said first threshold value, the paging period is increased and if current paging period is shorter than said maximum paging period, wherein the paging period is increased, or
-decreasing the paging period, if the comparison indicates that the difference between the representation of the received signal and any of the said one or more previously calculated representations of the received signal is greater than said first threshold value, the paging period is decreased and if current paging period is longer than said

minimum paging period, ~~wherein the paging period is decreased.~~

6. (currently amended) A method according to Claim 2, ~~characterized further comprising defining in that the~~ selection of the paging period ~~is defined by the user of the~~ mobile terminal.

7. (currently amended) A method according to Claim 1, ~~characterized further comprising controlling in that in the~~ idle mode the timing functions of the mobile station ~~are controlled with by using~~ a first oscillator (01), ~~wherein by~~ the time for changing from the idle mode to the standby mode ~~is specified affected at least partly on the basis of by~~ the frequency stability of the first oscillator (01).

8. (currently amended) A method according to Claim 7, ~~characterized further comprising in that the method includes~~ at least the following steps:

- ~~specifying a synchronization period is specified~~ for the mobile station (2) on the basis of the frequency stability of the first oscillator (01),
- ~~receiving a paging message (UD1) is received,~~
- ~~setting the mobile station (2) is set in the idle mode,~~
- ~~specifying the time of reception of the next paging message is specified,~~
- ~~comparing the specified synchronization period is compared with the specified time of reception,~~
- ~~examining the result of the comparison to determine if the synchronization period is at least as long as the time before the next time of reception of a paging message, wherein the method comprises setting the idle mode is set to end essentially immediately before the time of reception of the next paging message, or~~
- ~~if the synchronization period is shorter than the time before the time of reception of the next paging message, wherein the method comprises setting the idle mode is set to~~

end before the specified synchronization time has expired, whereby performing the synchronization is performed, and repeating said the setting, specifying, comparing and examining steps e) to g) are repeated, and

- repeating at least said receiving, setting, specifying, comparing and examining the steps b) to h) are repeated in connection with the reception of each paging message.

9. (currently amended) A method according to Claim 8, characterized comprising forming in that the data frame is formed of bursts, and that forming multiframe of a certain length are formed of the data frames, whereby the method further comprises specifying the synchronization period is specified as a number of multiframe.

10. (currently amended) A method according to Claim 9, characterized comprising forming in that the multiframe is formed of 52 data frames, that specifying the paging period is specified as 64 multiframe, and specifying that the synchronization period is specified as nine multiframe.

11. (currently amended) A method according to Claim 9, characterized comprising sending in that synchronization bursts are sent in data frames, and whereby performing the resynchronization is performed by receiving said synchronization bursts.

12. (currently amended) A method according to Claim 1, characterized comprising using in that a GPRS packet-switched network as the packet-switched network is a GPRS packet switched network.

13. (currently amended) A system, which comprises:

- a packet-switched network (4),
- at least one mobile station (2) having a data transfer connection with the packet-switched network (4),

- means (BSS, 38) for sending information in the form of data frames between the mobile station (2) and the packet-switched network (PLMN1, PLMN2),
- means (2) for specifying the paging period, whereby paging messages (UD1) are arranged to be sent essentially at the intervals of said paging period to the mobile station (2) to enable to synchronize the mobile station with the packet-switched network,
- means (32) for setting the mobile station (2) to the standby mode at least for the time of the reception of the paging messages (UD1),
- means (32) for setting the mobile station, which is in the standby mode, to the idle mode after the reception of the paging message (UD1), and
- means (25) for setting some of the functions of a mobile station (2) in the idle mode to one of the following states:
 - the power saving mode, or for switching them switched off in the idle mode,
 - characterized in that the system also comprises
 - means (T1) for changing the mode of operation of a mobile station, which is in the idle mode, from the idle mode to the standby mode to receive information transmitted in the packet switched network, wherein the means for changing the mode of operation of a mobile station are adapted to change the mode of operation according to any of the following alternatives: either at intervals during the paging period to receive information transmitted in the packet-switched network for maintaining synchronization to the packet-switched network, or at the end of the paging period to receive information transmitted in the packet-switched network for performing a resynchronization to the packet-switched network again.

14. (currently amended) A system according to Claim 13, characterized comprising in that the mobile station comprises a first oscillator (01) for controlling the timing functions of the mobile station in the idle mode, whereby the

time for changing from the idle mode to the standby mode is ~~specified affected at least partly on the basis of~~ by the frequency stability of the first oscillator-(01).

15. (currently amended) A system according to Claim 14, ~~characterized comprising~~ in that the mobile station-(2) also comprises:

- means for specifying the synchronization period on the basis of the frequency stability of the first oscillator-(01),
- means-(38) for receiving a paging message-(UD1),
- means-(32) for setting the mobile station-(2) to the idle mode,
- means-(32) for specifying the time of reception of the next paging message,
- comparison means-(32) for comparing the specified synchronization period with the specified time of reception,
- means-(32) for setting the ending time of the idle mode on the basis of the comparison carried out with said comparison means, whereby
- said means for setting the ending time of the idle mode being adapted to examine the result of the comparison to determine if the synchronization period is at least as long as the time before the next time of reception of a paging message, wherein the idle mode has been set to end essentially immediately before the time of reception of the next paging message, or
- if the synchronization period is shorter than the time before the time of reception of the next paging message, wherein the idle mode has been set to end before the specified synchronization time has expired, whereby the system is adapted to perform the synchronization is arranged to be performed, and to set the mobile station to be set to the idle mode after the synchronization.

16. (currently amended) A ~~method system~~ according to Claim 15, ~~characterized wherein that the data frame has been comprises formed of bursts, and that multiframe~~ of a certain length

~~have been formed~~ ~~comprises~~ of the data frames, whereby ~~a~~ number of multiframe~~s~~ specifies the synchronization period is arranged to be specified as a number of multiframe~~s~~.

17. (currently amended) A ~~method~~ system according to Claim 16, characterized comprising in that the multiframe ~~has been~~ is formed of 52 data frames, that the paging period ~~has been~~ is specified as 64 multiframe~~s~~, and that the synchronization period ~~has been~~ is specified as nine multiframe~~s~~.

18. (currently amended) A ~~method~~ system according to Claim 15, characterized wherein said means for sending information are adapted to send in that synchronization bursts are arranged to be sent in data frames, whereby the system is adapted to receiving said synchronization bursts to perform the resynchronization is arranged to be performed by receiving said synchronization bursts.

19. (currently amended) A system according to Claim 13, characterized wherein that the packet-switched network is a GPRS packet-switched network.

20. (currently amended) A mobile station—(2), which comprises:

- means—(38) for establishing a data transfer connection to the packet-switched network—(4),
— means—(32) for specifying the paging period, a receiver for receiving whereby paging messages (UD1) which are arranged to be sent essentially at the intervals of said paging period from the packet-switched network to the mobile station—(2) to enable to synchronize the mobile station with the packet-switched network,

- means—(32) for setting the mobile station—(2) to the standby mode at least for the time of the reception of the paging messages (UD1),

- means—(32) for setting the mobile station, which is in the standby mode, to the idle mode after the reception of the paging message (UD1), and

means (25) for setting some of the functions of a mobile station (2) in the idle mode to one of the following states:

the power saving mode, or for

switching them off in the idle mode,

characterized in that the system also comprises means (T1)

for changing the mode of operation of a mobile station, which

is in the idle mode, from the idle mode to the standby mode

to receive information transmitted in the packet-switched

network, wherein the means for changing the mode of operation

of a mobile station are adapted to change the mode of

operation according to one of the following alternatives:

either at intervals during the paging period to receive

information transmitted in the packet-switched network for

maintaining synchronization to the packet-switched network

when the mobile station is synchronized to the packet-

switched network, or at the end of the paging period to

receive information transmitted in the packet-switched

network for performing synchronization to the packet-switched

network again when the mobile station is not synchronized to

the packet-switched network.